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Final Report

BY

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LESTER L. MILLER, JR.

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## FOREWORD

To be effective in battle an artillery force must meet with and destroy the enemy. One of the first things to be considered is their disposition. Although the name for doing this was changed the purpose remains the same. In field artillery parlance it has been called survey, observation, counter-battery, counterbombardment or locating. This bibliography is concerned with two components of survey that give the direction to triangulation and chart-map traversing. These terms are sound and flash ranging which were first developed during WWI, by forces of the United States Army.

Sound ranging uses principles of acoustics for gun spotting. An arc of microphone pick-up stations record the sounds of enemy guns and calculate their location and distance along a base line by plotting "rays" in that direction. This system was perfected by U.S. artillery during WWI to the extent that 117 German gun positions were located and destroyed in a single twenty-four hour period. During WWII, the fact that sound is greatly amplified by sub-zero conditions allowed the Russians to use this process to excellent advantage against the German artillery on the Eastern front.

Flash ranging, a term often used with sound ranging, locates guns by their muzzle flash. During WWII U.S. field artillery fighting techniques made much use of this means to effectively decimate the axis forces so as to win the war. This was used particularly at night. Today, developments in smokeless and flashless gunpowder necessitate the use of radar, infrared, and other devices to achieve the same goal.

This bibliography presents points of view and lessons learned from British, French, German, Russian, and U.S. experience. Presented here are materials from books and periodicals which provide historical and contemporary coverage.

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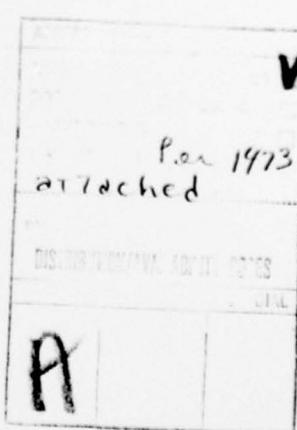


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